

SEQUENCE LISTING

<110> MATSUI, Hideki

WATANABE, Tomomichi

<120> Preventives/remedies for neurodegenerative disease

<130> 3097 USOP

<150> PCT/JP2003/011631

<151> 2003-09-11

<150> JP2002-269091

<151> 2002-09-13

<160> 25

<210> 1

<211> 358

<212> PRT

<213> Homo sapience

<400> 1

Met Arg Ala Thr Pro Leu Ala Ala Pro Ala Gly Ser Leu Ser Arg Lys

5 10 15

Lys Arg Leu Glu Leu Asp Asp Asn Leu Asp Thr Glu Arg Pro Val Gln

20 25 30

Lys Arg Ala Arg Ser Gly Pro Gln Pro Arg Leu Pro Pro Cys Leu Leu

35 40 45

Pro Leu Ser Pro Pro Thr Ala Pro Asp Arg Ala Thr Ala Val Ala Thr

50 55 60

Ala Ser Arg Leu Gly Pro Tyr Val Leu Leu Glu Pro Glu Glu Gly Gly

65 70 75 80

Arg Ala Tyr Gln Ala Leu His Cys Pro Thr Gly Thr Glu Tyr Thr Cys

85 90 95

Lys Val Tyr Pro Val Gln Glu Ala Leu Ala Val Leu Glu Pro Tyr Ala

100 105 110

Arg Leu Pro Pro His Lys His Val Ala Arg Pro Thr Glu Val Leu Ala
 115 120 125
 Gly Thr Gln Leu Leu Tyr Ala Phe Phe Thr Arg Thr His Gly Asp Met
 130 135 140
 His Ser Leu Val Arg Ser Arg His Arg Ile Pro Glu Pro Glu Ala Ala
 145 150 155 160
 Val Leu Phe Arg Gln Met Ala Thr Ala Leu Ala His Cys His Gln His
 165 170 175
 Gly Leu Val Leu Arg Asp Leu Lys Leu Cys Arg Phe Val Phe Ala Asp
 180 185 190
 Arg Glu Arg Lys Lys Leu Val Leu Glu Asn Leu Glu Asp Ser Cys Val
 195 200 205
 Leu Thr Gly Pro Asp Asp Ser Leu Trp Asp Lys His Ala Cys Pro Ala
 210 215 220
 Tyr Val Gly Pro Glu Ile Leu Ser Ser Arg Ala Ser Tyr Ser Gly Lys
 225 230 235 240
 Ala Ala Asp Val Trp Ser Leu Gly Val Ala Leu Phe Thr Met Leu Ala
 245 250 255
 Gly His Tyr Pro Phe Gln Asp Ser Glu Pro Val Leu Leu Phe Gly Lys
 260 265 270
 Ile Arg Arg Gly Ala Tyr Ala Leu Pro Ala Gly Leu Ser Ala Pro Ala
 275 280 285
 Arg Cys Leu Val Arg Cys Leu Leu Arg Arg Glu Pro Ala Glu Arg Leu
 290 295 300
 Thr Ala Thr Gly Ile Leu Leu His Pro Trp Leu Arg Gln Asp Pro Met
 305 310 315 320
 Pro Leu Ala Pro Thr Arg Ser His Leu Trp Glu Ala Ala Gln Val Val
 325 330 335
 Pro Asp Gly Leu Gly Leu Asp Glu Ala Arg Glu Glu Glu Gly Asp Arg
 340 345 350
 Glu Val Val Leu Tyr Gly
 355

<210> 2

<211> 1074

<212> DNA

<213> Homo sapience

<400> 2

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gctgaacggc tcacagccac aggcctcctc ctgcaccctt ggctgcgaca ggaccgatg 960
cccttagccc caaccgatc ccattcttgg gaggtgtccc aggtgttccc tgatggactg 1020
gggctggacg aagccagga agaggagga gacagagaag tggttctgta tggc 1074

<210> 3

<211> 32

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 3

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<210> 4

<211> 28

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 4

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28

<210> 5

<211> 1074

<212> DNA

<213> Homo sapience

<400> 5

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gctgtggcca ctgcctcccg tctggggccc tatgtctcc tggagcccga ggagggcggg 240
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catggggaca tgcacagcct ggtgcgaagc cgccaccgta tccctgagcc tgaggctgcc 480
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gggctggacg aagccagga agaggagga gacagagaag tggttctgta tggc 1074

<210> 6

<211> 358

<212> PRT

<213> Homo sapience

<400> 6

Met Arg Ala Thr Pro Leu Ala Ala Pro Ala Gly Ser Leu Ser Arg Lys
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 Lys Arg Leu Glu Leu Asp Asp Asn Leu Asp Thr Glu Arg Pro Val Gln
 20 25 30
 Lys Arg Ala Arg Ser Gly Pro Gln Pro Arg Leu Pro Pro Cys Leu Leu
 35 40 45
 Pro Leu Ser Pro Pro Thr Ala Pro Asp Arg Ala Thr Ala Val Ala Thr
 50 55 60
 Ala Ser Arg Leu Gly Pro Tyr Val Leu Leu Glu Pro Glu Glu Gly Gly
 65 70 75 80
 Arg Ala Tyr Gln Ala Leu His Cys Pro Thr Gly Thr Glu Tyr Thr Cys
 85 90 95
 Lys Val Tyr Pro Val Gln Glu Ala Pro Ala Val Leu Glu Pro Tyr Ala
 100 105 110
 Arg Leu Pro Pro His Lys His Val Ala Arg Pro Thr Glu Val Leu Ala
 115 120 125
 Gly Thr Gln Leu Leu Tyr Ala Phe Phe Thr Arg Thr His Gly Asp Met
 130 135 140
 His Ser Leu Val Arg Ser Arg His Arg Ile Pro Glu Pro Glu Ala Ala
 145 150 155 160
 Val Leu Phe Arg Gln Met Ala Thr Ala Leu Ala His Cys His Gln His
 165 170 175
 Gly Leu Val Leu Arg Asp Leu Lys Leu Cys Arg Phe Val Phe Ala Asp
 180 185 190
 Arg Glu Arg Lys Lys Leu Val Leu Glu Asn Leu Glu Asp Ser Cys Val
 195 200 205
 Leu Thr Gly Pro Asp Asp Ser Leu Trp Asp Lys His Ala Cys Pro Ala
 210 215 220
 Tyr Val Gly Pro Glu Ile Leu Ser Ser Arg Ala Ser Tyr Ser Gly Lys
 225 230 235 240
 Ala Ala Asp Val Trp Ser Leu Gly Val Ala Leu Phe Thr Met Leu Ala
 245 250 255
 Gly His Tyr Pro Phe Gln Asp Ser Glu Pro Val Leu Leu Phe Gly Lys
 260 265 270
 Ile Arg Arg Gly Ala Tyr Ala Leu Pro Ala Gly Leu Ser Ala Pro Ala
 275 280 285
 Arg Cys Leu Val Arg Cys Leu Leu Arg Arg Glu Pro Ala Glu Arg Leu

290 295 300
 Thr Ala Thr Gly Ile Leu Leu His Pro Trp Leu Arg Gln Asp Pro Met
 305 310 315 320
 Pro Leu Ala Pro Thr Arg Ser His Leu Trp Glu Ala Ala Gln Val Val
 325 330 335
 Pro Asp Gly Leu Gly Leu Asp Glu Ala Arg Glu Glu Glu Gly Asp Arg
 340 345 350
 Glu Val Val Leu Tyr Gly
 355

<210> 7

<211> 1074

<212> DNA

<213> Homo sapience

<400> 7

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 cccagactgc cccctgcct gttgccctg agccaccta ctgctccaga tctgcaact 180
 gctgtggcca ctgcctcccg tcttgggcc tatgtctcc tggagccga ggaggcgagg 240
 cgggctacc gggcctgca ctgcctaca ggcactgagt atacctgaa ggtgtacccc 300
 gtccaggaag ccccgccgt gctggagccc tatgcgcggc tgccccgca caagcatgtg 360
 gctcggcca ctgaggtcct ggtggtacc cagctcctct acgcctttt cactcggacc 420
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 gtgtcttcc gccagatggc caccgcccgt gcgcactgtc accagcacgg tctgtctctg 540
 cgtgatctca agctgtgtcg cttgtcttc gctgaccgtg agaggaagaa gctggtgctg 600
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 gcgtgccag cctacgtggg acctgagata ctgagctcac gggcctcata ctggggaag 720
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 cccttagccc caaccgatc ccatctctgg gaggtgccc aggtgtgccc tgatgtctg 1020
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<210> 8

<211> 358

<212> PRT

<213> Homo sapience

<400> 8

Met Arg Ala Thr Pro Leu Ala Ala Pro Ala Gly Ser Leu Ser Arg Lys
5 10 15
Lys Arg Leu Glu Leu Asp Asp Asn Leu Asp Thr Glu Arg Pro Val Gln
20 25 30
Lys Arg Ala Arg Ser Gly Pro Gln Pro Arg Leu Pro Pro Cys Leu Leu
35 40 45
Pro Leu Ser Pro Pro Thr Ala Pro Asp Arg Ala Thr Ala Val Ala Thr
50 55 60
Ala Ser Arg Leu Gly Pro Tyr Val Leu Leu Glu Pro Glu Glu Gly Gly
65 70 75 80
Arg Ala Tyr Arg Ala Leu His Cys Pro Thr Gly Thr Glu Tyr Thr Cys
85 90 95
Lys Val Tyr Pro Val Gln Glu Ala Pro Ala Val Leu Glu Pro Tyr Ala
100 105 110
Arg Leu Pro Pro His Lys His Val Ala Arg Pro Thr Glu Val Leu Ala
115 120 125
Gly Thr Gln Leu Leu Tyr Ala Phe Phe Thr Arg Thr His Gly Asp Met
130 135 140
His Ser Leu Val Arg Ser Arg His Arg Ile Pro Glu Pro Glu Ala Ala
145 150 155 160
Val Leu Phe Arg Gln Met Ala Thr Ala Leu Ala His Cys His Gln His
165 170 175
Gly Leu Val Leu Arg Asp Leu Lys Leu Cys Arg Phe Val Phe Ala Asp
180 185 190
Arg Glu Arg Lys Lys Leu Val Leu Glu Asn Leu Glu Asp Ser Cys Val
195 200 205
Leu Thr Gly Pro Asp Asp Ser Leu Trp Asp Lys His Ala Cys Pro Ala
210 215 220
Tyr Val Gly Pro Glu Ile Leu Ser Ser Arg Ala Ser Tyr Ser Gly Lys
225 230 235 240
Ala Ala Asp Val Trp Ser Leu Gly Val Ala Leu Phe Thr Met Leu Ala
245 250 255
Gly His Tyr Pro Phe Gln Asp Ser Glu Pro Val Leu Leu Phe Gly Lys

260 265 270
 Ile Arg Arg Gly Ala Tyr Ala Leu Pro Ala Gly Leu Ser Ala Pro Ala
 275 280 285
 Arg Cys Leu Val Arg Cys Leu Leu Arg Arg Glu Pro Ala Glu Arg Leu
 290 295 300
 Thr Ala Thr Gly Ile Leu Leu His Pro Trp Leu Arg Gln Asp Pro Met
 305 310 315 320
 Pro Leu Ala Pro Thr Arg Ser His Leu Trp Glu Ala Ala Gln Val Val
 325 330 335
 Pro Asp Gly Leu Gly Leu Asp Glu Ala Arg Glu Glu Glu Gly Asp Arg
 340 345 350
 Glu Val Val Leu Tyr Gly
 355

<210> 9

<211> 1074

<212> DNA

<213> Homo sapience

<400> 9

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 cccttagccc caaccgatc ccactcttg gaggtgccc aggtggtccc tgatggactg 1020

gggctggacg aagccaggga agaggaggga gacagagaag tggttctgta tggc 1074

<210> 10

<211> 358

<212> PRT

<213> Homo sapience

<400> 10

Met Arg Ala Thr Pro Leu Ala Ala Pro Ala Gly Ser Leu Ser Arg Lys

5 10 15

Lys Arg Leu Glu Leu Asp Asp Asn Leu Asp Thr Glu Arg Pro Val Gln

20 25 30

Lys Arg Ala Arg Ser Gly Pro Gln Pro Arg Leu Pro Pro Cys Leu Leu

35 40 45

Pro Leu Ser Pro Pro Thr Ala Pro Asp Arg Ala Thr Ala Val Ala Thr

50 55 60

Ala Ser Arg Leu Gly Pro Tyr Val Leu Leu Glu Pro Glu Glu Gly Gly

65 70 75 80

Arg Ala Tyr Gln Ala Leu His Cys Pro Thr Gly Thr Glu Tyr Thr Cys

85 90 95

Lys Val Tyr Pro Val Gln Glu Ala Leu Ala Val Leu Glu Pro Tyr Ala

100 105 110

Arg Leu Pro Pro His Lys His Val Ala Arg Pro Thr Glu Val Leu Ala

115 120 125

Gly Thr Gln Leu Leu Tyr Ala Phe Phe Thr Arg Thr His Gly Asp Met

130 135 140

His Ser Leu Val Arg Thr Arg His Arg Ile Pro Glu Pro Glu Ala Ala

145 150 155 160

Val Leu Phe Arg Gln Met Ala Thr Ala Leu Ala His Cys His Gln His

165 170 175

Gly Leu Val Leu Arg Asp Leu Lys Leu Cys Arg Phe Val Phe Ala Asp

180 185 190

Arg Glu Arg Lys Lys Leu Val Leu Glu Asn Leu Glu Asp Ser Cys Val

195 200 205

Leu Thr Gly Pro Asp Asp Ser Leu Trp Asp Lys His Ala Cys Pro Ala

210 215 220

Tyr Val Gly Pro Glu Ile Leu Ser Ser Arg Ala Ser Tyr Ser Gly Lys

225 230 235 240
 Ala Ala Asp Val Trp Ser Leu Gly Val Ala Leu Phe Thr Met Leu Ala
 245 250 255
 Gly His Tyr Pro Phe Gln Asp Ser Glu Pro Val Leu Leu Phe Gly Lys
 260 265 270
 Ile Arg Arg Gly Ala Tyr Ala Leu Pro Ala Gly Leu Ser Ala Pro Ala
 275 280 285
 Arg Cys Leu Val Arg Cys Leu Leu Arg Arg Glu Pro Ala Glu Arg Leu
 290 295 300
 Thr Ala Thr Gly Ile Leu Leu His Pro Trp Leu Arg Gln Asp Pro Met
 305 310 315 320
 Pro Leu Ala Pro Thr Arg Ser His Leu Trp Glu Ala Ala Gln Val Val
 325 330 335
 Pro Asp Gly Leu Gly Leu Asp Glu Ala Arg Glu Glu Glu Gly Asp Arg
 340 345 350
 Glu Val Val Leu Tyr Gly
 355

<210> 11

<211> 969

<212> DNA

<213> Homo sapience

<400> 11

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<210> 12

<211> 323

<212> PRT

<213> Homo sapience

<400> 12

Met Arg Ala Thr Pro Leu Ala Ala Ser Ala Gly Ser Leu Ser Arg Lys

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Lys Arg Leu Glu Leu Asp Asp Asn Leu Asp Thr Glu Arg Pro Val Gln

20 25 30

Lys Arg Ala Arg Ser Gly Pro Gln Pro Arg Leu Pro Pro Cys Leu Leu

35 40 45

Pro Leu Ser Pro Pro Thr Ala Pro Asp Arg Ala Thr Ala Val Ala Thr

50 55 60

Ala Ser Arg Leu Gly Pro Tyr Val Leu Leu Glu Pro Glu Glu Gly Gly

65 70 75 80

Arg Ala Tyr Gln Ala Leu His Cys Pro Thr Gly Thr Glu Tyr Thr Cys

85 90 95

Lys Val Tyr Pro Val Gln Glu Ala Leu Ala Val Leu Glu Pro Tyr Ala

100 105 110

Arg Leu Pro Pro Asp Lys His Val Ala Trp Pro Thr Glu Gly Leu Ala

115 120 125

Gly Thr Gln Leu Leu Tyr Ala Phe Phe Thr Trp Thr His Gly Asp Met

130 135 140

His Arg Leu Ile Gly His Thr Pro Cys Ala His Cys Asp Gln Thr Arg

145 150 155 160

Lys Lys Leu Val Leu Glu Asn Leu Glu Asp Ser Cys Val Leu Thr Gly

165 170 175

Pro Asp Asp Ser Leu Trp Asp Lys His Ala Cys Pro Ala Tyr Val Gly

180 185 190

Pro Glu Ile Leu Ser Ser Arg Ala Ser Tyr Ser Gly Lys Ala Ala Asn

195 200 205

Val Trp Ser Leu Gly Val Ala Leu Phe Thr Met Leu Ala Gly His Tyr

210 215 220

Pro Phe Gln Asp Ser Glu Pro Val Leu Leu Phe Gly Lys Ile Arg Arg

225 230 235 240

Gly Ala Tyr Ala Leu Pro Ala Gly Leu Ser Ala Pro Ala Arg Cys Leu

245 250 255

Val Arg Cys Leu Leu Arg Arg Glu Pro Ala Glu Arg Leu Thr Ala Thr

260 265 270

Gly Ile Leu Leu His Pro Trp Leu Arg Gln Asp Pro Met Pro Leu Ala

275 280 285

Pro Thr Arg Ser His Leu Trp Glu Ala Ala Gln Val Val Pro Asp Gly

290 295 300

Leu Gly Leu Asp Glu Ala Arg Glu Glu Glu Gly Asp Arg Glu Val Val

305 310 315 320

Leu Tyr Gly

<210> 13

<211> 1074

<212> DNA

<213> Homo sapience

<400> 13

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gctgaacggc tcacagccac aggcacccct ctgcacccct ggctgcgaca ggacccgatg 960
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<210> 14

<211> 358

<212> PRT

<213> Homo sapience

<400> 14

Met Arg Ala Thr Pro Leu Ala Ala Pro Ala Gly Ser Leu Ser Arg Lys

5 10 15

Lys Arg Leu Glu Leu Asp Asp Asn Leu Asp Thr Glu Arg Pro Val Gln

20 25 30

Lys Arg Ala Arg Ser Gly Pro Gln Pro Arg Leu Pro Pro Cys Leu Leu

35 40 45

Pro Leu Ser Pro Pro Thr Ala Pro Asp Arg Ala Thr Ala Val Ala Thr

50 55 60

Ala Ser Arg Leu Gly Pro Tyr Val Leu Leu Glu Pro Glu Glu Gly Gly

65 70 75 80

Arg Ala Tyr Gln Ala Leu His Cys Pro Thr Gly Thr Glu Tyr Thr Cys

85 90 95

Arg Val Tyr Pro Val Gln Glu Ala Leu Ala Val Leu Glu Pro Tyr Ala

100 105 110

Arg Leu Pro Pro His Lys His Val Ala Arg Pro Thr Glu Val Leu Ala

115 120 125

Gly Thr Gln Leu Leu Tyr Ala Phe Phe Thr Arg Thr His Gly Asp Met

130 135 140

His Ser Leu Val Arg Ser Arg His Arg Ile Pro Glu Pro Glu Ala Ala

145 150 155 160

Val Leu Phe Arg Gln Met Ala Thr Ala Leu Ala His Cys His Gln His

165 170 175

Gly Leu Val Leu Arg Asp Leu Lys Leu Cys Arg Phe Val Phe Ala Asp

180 185 190

Arg Glu Arg Lys Lys Leu Val Leu Glu Asn Leu Glu Asp Ser Cys Val

195 200 205

Leu Thr Gly Pro Asp Asp Ser Leu Trp Asp Lys His Ala Cys Pro Ala

210 215 220
 Tyr Val Gly Pro Glu Ile Leu Ser Ser Arg Ala Ser Tyr Ser Gly Lys
 225 230 235 240
 Ala Ala Asp Val Trp Ser Leu Gly Val Ala Leu Phe Thr Met Leu Ala
 245 250 255
 Gly His Tyr Pro Phe Gln Asp Ser Glu Pro Val Leu Leu Phe Gly Lys
 260 265 270
 Ile Arg Arg Gly Ala Tyr Ala Leu Pro Ala Gly Leu Ser Ala Pro Ala
 275 280 285
 Arg Cys Leu Val Arg Cys Leu Leu Arg Arg Glu Pro Ala Glu Arg Leu
 290 295 300
 Thr Ala Thr Gly Ile Leu Leu His Pro Trp Leu Arg Gln Asp Pro Met
 305 310 315 320
 Pro Leu Ala Pro Thr Arg Ser His Leu Trp Glu Ala Ala Gln Val Val
 325 330 335
 Pro Asp Gly Leu Gly Leu Asp Glu Ala Arg Glu Glu Glu Gly Asp Arg
 340 345 350
 Glu Val Val Leu Tyr Gly
 355

<210> 15

<211> 1074

<212> DNA

<213> Homo sapience

<400> 15

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 cccagactgc cccctgcct gttgccctg agccaccta ctgctccaga tcgtgcaact 180
 gctgtggcca ctgcctccg tcttgggcc tatgtctcc tggagccga ggagggcggg 240
 cgggcctacc aggcctgca ctgccctaca ggcactgagt atacctgcag ggtgtacccc 300
 gtccaggaag ccttggcgt gctggagccc tatgcgagg tcccccgca caagcatgtg 360
 gctgggcca ctgaggtcct ggtggtacc cagctcctc acgcctttt cactcggacc 420
 catggggaca tgcacagcct ggtgcgaagc cgccaccgta tccctgagcc tgaggctgcc 480
 gtgtcttcc gccagatggc caccgccctg gcgcactgtc accagcacgg tctgtcctg 540
 cgtgatctca agctgtgtcg cttgtcttc gctgaccgtg agaggaagaa gctggtgtg 600
 gagaacctgg aggactcctg cgtgctgact gggccagatg attcctgtg ggacaagcac 660

gcgtgcccag cctacgtggg acctgagata ctcagctcac gggcctcata ctgaggcaag 720
gcagccgatg tctggagcct gggcgtggcg ctctcacca tgctggccgg ccactacccc 780
ttcaggact cggagcctgt cctgctcttc ggcaagatcc gccgcggggc ctacgccttg 840
cctgcaggcc tctcgcccc tgcgcgtgt ctggttcgt gctccttcg tcgggagcca 900
gctgaacggc tcacagccac aggcaccttc ctgcaccctt ggctgcgaca ggacccgatg 960
cccttagccc caaccgatc ccactcttg gaggtgccc aggtggctcc tgatggactg 1020
gggctggacg aagccaggga agaggaggga gacagagaag tggttctgta tggc 1074

<210> 16

<211> 358

<212> PRT

<213> Homo sapience

<400> 16

Met Arg Ala Thr Pro Leu Ala Ala Pro Ala Gly Ser Leu Ser Arg Lys

5 10 15

Lys Arg Leu Glu Leu Asp Asp Asn Leu Asp Thr Glu Arg Pro Val Gln

20 25 30

Lys Arg Ala Arg Ser Gly Pro Gln Pro Arg Leu Pro Pro Cys Leu Leu

35 40 45

Pro Leu Ser Pro Pro Thr Ala Pro Asp Arg Ala Thr Ala Val Ala Thr

50 55 60

Ala Ser Arg Leu Gly Pro Tyr Val Leu Leu Glu Pro Glu Glu Gly Gly

65 70 75 80

Arg Ala Tyr Gln Ala Leu His Cys Pro Thr Gly Thr Glu Tyr Thr Cys

85 90 95

Arg Val Tyr Pro Val Gln Glu Ala Leu Ala Val Leu Glu Pro Tyr Ala

100 105 110

Arg Leu Pro Pro His Lys His Val Ala Arg Pro Thr Glu Val Leu Ala

115 120 125

Gly Thr Gln Leu Leu Tyr Ala Phe Phe Thr Arg Thr His Gly Asp Met

130 135 140

His Ser Leu Val Arg Ser Arg His Arg Ile Pro Glu Pro Glu Ala Ala

145 150 155 160

Val Leu Phe Arg Gln Met Ala Thr Ala Leu Ala His Cys His Gln His

165 170 175

Gly Leu Val Leu Arg Asp Leu Lys Leu Cys Arg Phe Val Phe Ala Asp

180 185 190
 Arg Glu Arg Lys Lys Leu Val Leu Glu Asn Leu Glu Asp Ser Cys Val
 195 200 205
 Leu Thr Gly Pro Asp Asp Ser Leu Trp Asp Lys His Ala Cys Pro Ala
 210 215 220
 Tyr Val Gly Pro Glu Ile Leu Ser Ser Arg Ala Ser Tyr Ser Gly Lys
 225 230 235 240
 Ala Ala Asp Val Trp Ser Leu Gly Val Ala Leu Phe Thr Met Leu Ala
 245 250 255
 Gly His Tyr Pro Phe Gln Asp Ser Glu Pro Val Leu Leu Phe Gly Lys
 260 265 270
 Ile Arg Arg Gly Ala Tyr Ala Leu Pro Ala Gly Leu Ser Ala Pro Ala
 275 280 285
 Arg Cys Leu Val Arg Cys Leu Leu Arg Arg Glu Pro Ala Glu Arg Leu
 290 295 300
 Thr Ala Thr Gly Ile Leu Leu His Pro Trp Leu Arg Gln Asp Pro Met
 305 310 315 320
 Pro Leu Ala Pro Thr Arg Ser His Leu Trp Glu Ala Ala Gln Val Val
 325 330 335
 Pro Asp Gly Leu Gly Leu Asp Glu Ala Arg Glu Glu Glu Gly Asp Arg
 340 345 350
 Glu Val Val Leu Tyr Gly
 355

<210> 17

<211> 1074

<212> DNA

<213> Homo sapience

<400> 17

atgcgagcca cccctctggc tgctcctgcg ggtccctgt ccaggaagaa gcggttgag 60
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 cccagactgc cccctgcct gttgcccctg agcccaccta ctgctccaga tcgtgcaact 180
 gctgtggcca ctgcctcccg tcttgggccc tatgtcctcc tggagcccga ggagggcggg 240
 cgggcctacc aggcctgca ctgcctaca ggcactgagt atacctgcaa ggtgtacccc 300
 gtccaggaag ccttgccgt gctggagccc tatgcgcggc tgccccgca caagcatgtg 360
 gctcgcccca ctgaggtcct ggctggtacc cagctcctct acgcctttt cactcggacc 420

catggggaca tgcacagcct ggtgcgaagc cgccaccgta tccctgagcc tgaggctgcc 480
gtgtcttcc gccagatggc caccgccctg ggcactgtc accagcacgg tctggtcctg 540
cgtgatctca agctgtgtcg cttgtcttc gctgaccgtg agaggaagaa gctggtgctg 600
gagaacctgg aggactcctg cgtgctgact gggccagatg attccctgtg ggacaagcac 660
gcgtgcccag cctacgtggg acctgagata ctacgtcac gggcctcata ctggggaag 720
gcagccgatg tctggagcct gggcgtggcg ctctcacca tctggcccg ccactacccc 780
ttcaggact cggagcctgt cctgtcttc ggcaagatcc gccgcggggc ctacgccttg 840
cctgcaggcc tctggcccc tggcgtgtg ctggttcgt gctccttcg tcgggagcca 900
gctgaacggc tcacagccac aggcacctc ctgacccct ggctgcgaca ggaccgatg 960
cccttagccc caaccgatc ccactcttg gaggtgccc aggtgtccc tgatggactg 1020
gggctggacg aagccaggga agaggaggga gacagagaag tggttctgta tggc 1074

<210> 18

<211> 358

<212> PRT

<213> Homo sapience

<400> 18

Met Arg Ala Thr Pro Leu Ala Ala Pro Ala Gly Ser Leu Ser Arg Lys
5 10 15
Lys Arg Leu Glu Leu Asp Asp Asn Leu Asp Thr Glu Arg Pro Val Gln
20 25 30
Lys Arg Ala Arg Ser Gly Pro Gln Pro Arg Leu Pro Pro Cys Leu Leu
35 40 45
Pro Leu Ser Pro Pro Thr Ala Pro Asp Arg Ala Thr Ala Val Ala Thr
50 55 60
Ala Ser Arg Leu Gly Pro Tyr Val Leu Leu Glu Pro Glu Glu Gly Gly
65 70 75 80
Arg Ala Tyr Gln Ala Leu His Cys Pro Thr Gly Thr Glu Tyr Thr Cys
85 90 95
Lys Val Tyr Pro Val Gln Glu Ala Leu Ala Val Leu Glu Pro Tyr Ala
100 105 110
Arg Leu Pro Pro His Lys His Val Ala Arg Pro Thr Glu Val Leu Ala
115 120 125
Gly Thr Gln Leu Leu Tyr Ala Phe Phe Thr Arg Thr His Gly Asp Met
130 135 140
His Ser Leu Val Arg Ser Arg His Arg Ile Pro Glu Pro Glu Ala Ala

145 150 155 160
 Val Leu Phe Arg Gln Met Ala Thr Ala Leu Ala His Cys His Gln His
 165 170 175
 Gly Leu Val Leu Arg Asp Leu Lys Leu Cys Arg Phe Val Phe Ala Asp
 180 185 190
 Arg Glu Arg Lys Lys Leu Val Leu Glu Asn Leu Glu Asp Ser Cys Val
 195 200 205
 Leu Thr Gly Pro Asp Asp Ser Leu Trp Asp Lys His Ala Cys Pro Ala
 210 215 220
 Tyr Val Gly Pro Glu Ile Leu Ser Ser Arg Ala Ser Tyr Ser Gly Lys
 225 230 235 240
 Ala Ala Asp Val Trp Ser Leu Gly Val Ala Leu Phe Thr Met Leu Ala
 245 250 255
 Gly His Tyr Pro Phe Gln Asp Ser Glu Pro Val Leu Leu Phe Gly Lys
 260 265 270
 Ile Arg Arg Gly Ala Tyr Ala Leu Pro Ala Gly Leu Ser Ala Pro Ala
 275 280 285
 Arg Cys Leu Val Arg Cys Leu Leu Arg Arg Glu Pro Ala Glu Arg Leu
 290 295 300
 Thr Ala Thr Gly Ile Leu Leu His Pro Trp Leu Arg Gln Asp Pro Met
 305 310 315 320
 Pro Leu Ala Pro Thr Arg Ser His Leu Trp Glu Ala Ala Gln Val Val
 325 330 335
 Pro Asp Gly Leu Gly Leu Asp Glu Ala Arg Glu Glu Glu Gly Asp Arg
 340 345 350
 Glu Val Val Leu Tyr Gly
 355

<210> 19

<211> 1080

<212> DNA

<213> Homo sapience

<400> 19

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 ttgatgaca actagatac cgagcgtccc gtccagaaac gagctcgaag tgggccccag 120
 cccagactgc cccctgcct gttgccctg agccaccta ctgctccaga tcgtgcaact 180

gctgtggcca ctgcctcccg tcttgggccc tatgtcctcc tggagcccga ggagggcggg 240
 cgggcctacc aggccctgca ctgccctaca ggcactgagt atacctgcaa ggtgtacccc 300
 gtccaggaag ccctggccgt gctggagccc tatgcgcggg tgcctccgca caagcatgtg 360
 gctcggccca ctgaggctct ggctggtacc cagctcctct acgcctttt cactcggacc 420
 catggggaca tgcacagcct ggtgcgaagc cgccaccgta tccctgagcc tgaggctgcc 480
 gtgtcttcc gccagatggc caccgccctg gcgcactgtc accagcacgg tctggtcctg 540
 cgtgatctca agctgtgtcg cttgtcttc gctgaccgtg accgtgagaa gaagaagctg 600
 gtgtcggaga acctggagga ctctgcgtg ctgactgggc cagatgattc cctgtgggac 660
 aagcacgctg gccagccta cgtgggacct gagatactca gctcacgggc ctcatactcg 720
 ggcaaggcag ccgatgtctg gagcctgggc gtggcgctct tcacatgct ggccggccac 780
 tacccttcc aggactcgga gcctgtcctg ctctcggca agatccgccg cggggcctac 840
 gcctgcctg caggcctctc ggcccctgcc cgctgtctgg ttcgtgcct cctctcgcg 900
 gagccagctg aacggctcac agccacaggc atcctcctgc acccctggct gcgacaggac 960
 ccgatgccct tagcccaac ccgatccat ctctgggagg ctgccaggt ggtccctgat 1020
 ggactggggc tggacgaagc caggaagag gagggagaca gagaagtgtg tctgtatggc 1080

<210> 20

<211> 360

<212> PRT

<213> Homo sapience

<400> 20

Met	Arg	Ala	Thr	Pro	Leu	Ala	Ala	Pro	Ala	Gly	Ser	Leu	Ser	Arg	Lys
	5			10				15							
Lys	Arg	Leu	Glu	Leu	Asp	Asp	Asn	Leu	Asp	Thr	Glu	Arg	Pro	Val	Gln
	20			25				30							
Lys	Arg	Ala	Arg	Ser	Gly	Pro	Gln	Pro	Arg	Leu	Pro	Pro	Cys	Leu	Leu
	35			40				45							
Pro	Leu	Ser	Pro	Pro	Thr	Ala	Pro	Asp	Arg	Ala	Thr	Ala	Val	Ala	Thr
	50			55				60							
Ala	Ser	Arg	Leu	Gly	Pro	Tyr	Val	Leu	Leu	Glu	Pro	Glu	Glu	Gly	Gly
	65			70				75						80	
Arg	Ala	Tyr	Gln	Ala	Leu	His	Cys	Pro	Thr	Gly	Thr	Glu	Tyr	Thr	Cys
	85			90				95							
Lys	Val	Tyr	Pro	Val	Gln	Glu	Ala	Leu	Ala	Val	Leu	Glu	Pro	Tyr	Ala
	100			105				110							
Arg	Val	Pro	Pro	His	Lys	His	Val	Ala	Arg	Pro	Thr	Glu	Val	Leu	Ala

115 120 125
 Gly Thr Gln Leu Leu Tyr Ala Phe Phe Thr Arg Thr His Gly Asp Met
 130 135 140
 His Ser Leu Val Arg Ser Arg His Arg Ile Pro Glu Pro Glu Ala Ala
 145 150 155 160
 Val Leu Phe Arg Gln Met Ala Thr Ala Leu Ala His Cys His Gln His
 165 170 175
 Gly Leu Val Leu Arg Asp Leu Lys Leu Cys Arg Phe Val Phe Ala Asp
 180 185 190
 Arg Asp Arg Glu Lys Lys Lys Leu Val Leu Glu Asn Leu Glu Asp Ser
 195 200 205
 Cys Val Leu Thr Gly Pro Asp Asp Ser Leu Trp Asp Lys His Ala Cys
 210 215 220
 Pro Ala Tyr Val Gly Pro Glu Ile Leu Ser Ser Arg Ala Ser Tyr Ser
 225 230 235 240
 Gly Lys Ala Ala Asp Val Trp Ser Leu Gly Val Ala Leu Phe Thr Met
 245 250 255
 Leu Ala Gly His Tyr Pro Phe Gln Asp Ser Glu Pro Val Leu Leu Phe
 260 265 270
 Gly Lys Ile Arg Arg Gly Ala Tyr Ala Leu Pro Ala Gly Leu Ser Ala
 275 280 285
 Pro Ala Arg Cys Leu Val Arg Cys Leu Leu Arg Arg Glu Pro Ala Glu
 290 295 300
 Arg Leu Thr Ala Thr Gly Ile Leu Leu His Pro Trp Leu Arg Gln Asp
 305 310 315 320
 Pro Met Pro Leu Ala Pro Thr Arg Ser His Leu Trp Glu Ala Ala Gln
 325 330 335
 Val Val Pro Asp Gly Leu Gly Leu Asp Glu Ala Arg Glu Glu Glu Gly
 340 345 350
 Asp Arg Glu Val Val Leu Tyr Gly
 355 360

<210> 21

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 21

caccatgcga gccacatctc tggctgcttc

30

<210> 22

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 22

gctctagcca tacagcccca cctccccttc

30

<210> 23

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 23

gccatacaga accactctc tgtctcc

27

<210> 24

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 24

gccgccatga gcgacgtggc tattgtgaag

30

<210> 25

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 25

aggatgagcc ggtcgtcgtg ccggactatc

30